

~~CONFIDENTIAL~~11th April, 1959COCOM Document No. 3415.26/28COORDINATING COMMITTEEMEMORANDUM BY THE BELGIAN DELEGATIONINTERPRETATION OF ITEMS 1526 AND 4481 ON THE INTERNATIONAL LISTS

In the course of the meetings held on the 18th, 19th and 26th March 1959, it was decided that Delegations would submit to the Committee their views as to the application of Item 4481 (Railway signalling apparatus) and 1526 (Communications cable).

COCOM Document 3470 had already stressed the technical reasons which had led the Belgian Delegation to classify the cables asked for by the U.S.S.R. under the heading "Railway signalling apparatus". To satisfy the wishes expressed by the Committee, the statement below sets out the conditions which cables should fulfil in order to be classified under Item 4481 or under Item 1526.

RAILWAY SIGNALLING APPARATUS - ITEM 4481.

This equipment comprises apparatus for transmission and reception of signals as well as the liaison cables required by this apparatus.

The efficient running of a complex modern railway system demands the centralisation of controls and signals between large railway junctions, which in turn calls for the transmission of a considerable amount of information between these centres, information which must be controlled and coordinated.

It follows that the different sets of information apparatus must be linked by special cables having clearly determined characteristics, chiefly the following:

1. A heterogeneous make-up, that is to say that these cables cannot be formed of circuits of the same type, since they must provide different services (signalling, telecontrol of line equipment, telemetering - for example end-of-track points control, etc...) and control communications between railway junctions.

It follows that these liaison cables must be heterogeneous by the very nature of the circuits (wires, pairs intended especially for signalling and quads reserved in general for telecommunications) as well as by their electrostatic capacity.

2. Cables for railway lines are moreover differentiated further by special characteristics which increase the cost, such as a metal sheathing to reduce the effects of traction currents, a very high reduction factor in the neighbourhood of 0.1, a high dielectric strength between the sheathing and the group of conductors.

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- 2 -

COCOM Document No. 3415.26/2B

The foregoing underlines the necessity for the cables of a railway system to fulfil the following criteria:

- (a) protection formed by a sheathing of aluminium, steel or lead, shunted with copper wire in order to reduce the electrical resistance.
- (b) protection by strips having a higher permeability than those employed for everyday industrial uses.
- (c) testing tension of at least 2,000 volts between the group of conductors and the protective sheathing.

It cannot be denied that the efficiency and security of exploitation between railway junctions, and the size of these, will necessitate that such cables be equipped in a manner which will ensure normal communications, appropriate between junctions, but also that, if they are intended for other military ends properly so-called, for example, this can only be done at the expense of the exploitation of the railway lines they are meant to protect.

COMMUNICATIONS CABLES - ITEM 1526

These cables are distinguished by a completely homogenous make-up: circuits of the same type, quads of an electrostatic capacity reduced to about 25 nanofarads per kilometre, and without any special requirements as to sheathing, strip or insulating belt.

CONCLUSIONS

The difference between railway cables and classic communication cables can be summed up as follows:

- (a) a reinforced protective sheathing;
- (b) a dielectric strength above that of normal cables;
- (c) a number of quads in accordance with normal conditions for the exploitation of a railway line;
- (d) as the number of quads depends on the density of the railway traffic, this must be determined in each individual case.

REMARKS

If the quads of a railway system were intended for military uses, they might weaken to a dangerous degree the productivity of the system, and this, in its turn, would have a harmful effect upon the transport capacity, which would be paralysed in a proportion which would increase as the demand for communications increased.

As already pointed out during the meeting on the 17th March, the price per kilometre for railway signalling cables is far higher than that of a normal communications cable. Thus, if the U.S.S.R. wished to develop a warning system, they would be able to equip it at less expense and much more efficiently with proper communications cable than with railway cable.

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